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SPOTLIGHT

Arieh Gertler: THE KING OF HEURISTICS IN (ADIPO)PHARMACOLOGY

Born in Lublin, Poland in 1935, emigrated to Israel in 1950, served in the Israeli Defence Army in 1953-1955, graduated *summa cum laude* his BSc and MSc degree from the Faculty of Agriculture, Hebrew University of Jerusalem (HUJ), Rehovot in 1956/1961, Assistant Professor in the Department of Agricultural Biochemistry, Faculty of Agriculture in 1961/1965, awarded PhD degree in 1965, Postdoctoral fellow in the Department of Biochemistry, University of Toronto Medical School, Toronto, Canada in 1965/1966, Lecturer of Agricultural Biochemistry, Faculty of Agriculture, HUJ, Rehovot in 1966/1970, Visiting Scientist in University of Toronto Medical School, Toronto, Canada in 1969, Visiting Associate Professor, Department of Biochemistry, University of Washington Medical School, Seattle, Washington, USA in 1972/1973, Visiting Associate Professor, Department of Human Genetics, Yale University, New Haven, CT, USA, also Visiting Scientist in NIH, Bethesda, USA, in the last 41 years was teaching undergraduate courses in Biochemistry, Human Nutrition and Molecular Endocrinology and supervised 48 MSc and 32 PhD students, in brief, more than 50 years of passionate commitment in research and education, that is, Professor ARIEH GERTLER, one of the chief protagonists of the current episode in history of pharmacobiochemistry. He was awarded Rector's Prize-2002 for the Best Teacher, Best Researcher in the Hebrew University of Jerusalem and Kaye Award for Innovative Research-2009, and in 2012 elected Honorary Member of the Bulgarian Society for Cell Biology.

In 1990-1992 Dr Gertler was Director of Department of Biochemistry and Human Nutrition, Faculty of Agriculture, HUJ, Rehovot, in 1993 Director, School of Nutritional and



Arieh Gertler in his Laboratory where every day there is the possibility of making a new and exciting discovery.

Domestic Sciences, Faculty of Agriculture, HUJ, Rehovot, in 1993-1996 Director of Institute of Biochemistry, Food Science and Nutrition, Faculty of Agriculture, HUJ, Rehovot, in 2001-2007 Director of the Diagnostic System Laboratories (DSL) Ltd (Israel), 2003-now Founder, Director and Chief executive officer of Protein Laboratories Rehovot (PLR) Ltd.

Dr Gertler has published over 270 peer-reviewed papers and reviews in the fields of enzymology, animal nutrition, molecular endocrinology and biotechnology.

Until 1980 his research was mainly aimed at elucidation of the mechanism of action of proteolytic enzymes and their naturally occurring inhibitors. During the last 26 years, the main research interests of his Laboratory were changed in direction of molecular biology, endocrinology and adipopharmacology. These included: (i) hormonal control of development and

differentiation of bovine mammary gland, (ii) purification and characterization of prolactin receptors from various organs of lactating cow and from Nb2 lymphoma cells, (iii) cloning of prolactin and growth hormone receptors extracellular domains, (iv) investigation of the mitogenic effect of prolactin using Nb2 lymphoma cells as a model, (v) investigation of structurefunction relationship of human and fish growth hormones and bovine and ovine placental lactogen by sitedirected mutagenesis using recombinant DNA methodology, and (vi) preparation of leptin from several species of farm animals (sheep, cow, pig, rat and chicken). More recently, Gertler's Laboratory initiated study investigating protein-protein interaction in living cells using fluorescence resonance energy transfer (FRET) methodology. His recent findings are demonstrating leptin's ability to transactivate erbB2 oncogenic receptor and thus showing a putative molecular link between obesity and breast cancer. During the last 19 years an extensive experience in cloning and purification of native and recombinant proteins was accumulated and over 400 different recombinant proteins or their mutated analogues were prepared in Gertler's Laboratory, also in collaboration with many Laboratories from USA, Canada, France, England, Germany, Belgium, Poland, Thailand, Japan, Australia and New Zealand.

Remarkably, Arie Gertler's present projects carried out in his Laboratory include:

(i) development of leptin, interleukin 22, resistin and prolactin antagonists using site directed mutagenesis and their use as potential drugs in inflammatory and autoimmune diseases, cancer, uremic cachexia, metabolic syndrome and type 2 diabetes, and (ii) transactivation of erbB oncogenic receptors by leptin and prolactin and its relevance to breast cancer. In December 2015, Arie Gertler and his wife Anna visited the Falkland Islands and South Georgia island, also sub-Antarctic islands, where the colourful King penguins live on (Photograph 2 taken by Arie).

George N. Chaldakov



King penguins: living in peace beauty of Mother Nature.